What is claimed is:

1.   A system for distributing electrical power over a data communication cabling infrastructure to one or more electrical power consuming network devices, comprising:

        a data communications cabling network;

        a source of electrical power;

        at least one power/data combiner coupled to said source of electrical power and to said data communications cabling network, said at least one power/data combiner operative to generate and inject a low frequency power signal onto a data communications signal received from said data communications cabling network so as to yield a combined power/data signal which is subsequently output onto said data communications cabling network; and

        at least one power/data splitter adapted to receive said combined power/data signal and to extract and separate therefrom said original data communication signal and said low frequency power signal.

2.   The system according to claim 1, wherein said data communications network comprises an Ethernet based Local Area Network (LAN).

3.   The system according to claim 1, wherein said power/data combiner is implemented as a standalone unit.

4.   The system according to claim 1, wherein said power/data combiner is integrated into a Local Area Network (LAN) hub.

5.   The system according to claim 1, wherein said power/data combiner is integrated into a Local Area Network (LAN) switch.

6.   The system according to claim 1, wherein said power/data combiner comprises a plurality of data only input ports and a plurality of data plus power output ports, each data in port and data plus power output port forming a separate channel.

7.   The system according to claim 1, wherein said power/data combiner is adapted to receive electrical from an AC mains power receptacle.

8.   The system according to claim 1, wherein said power/data combiner is adapted to receive electrical from an uninterruptable Power Supply (UPS).

9.   The system according to claim 1, wherein said power/data combiner is adapted to receive electrical from an another power/data combiner.

10.   The system according to claim 1, wherein said power/data combiner comprises means for filtering high frequency noise and ripple.

11.   The system according to claim 1, wherein said power/data combiner comprises means for sensing the current in said low frequency power signal.

12.   The system according to claim 1, wherein said power/data combiner comprises means for connecting and disconnecting said low frequency power signal to and from said combined output power/data signal.

13.   The system according to claim 1, wherein said power/data combiner comprises means for detecting no-load and overload conditions on said combined output power/data signal.

14.   The system according to claim 1, further comprising a management unit for monitoring and provisioning, via said data communications cabling network, the power/data combiners and power/data splitters located in said data communications cabling network.

15.   The system according to claim 1, wherein said power/data splitter is implemented as a standalone unit.

16.   The system according to claim 1, wherein said power/data combiner is integrated into a network device.

17.   The system according to claim 1, wherein said power/data combiner comprises an AC/DC power converter for converting said extracted low frequency power signal into one or more output voltages.

18.   The system according to claim 1, wherein said power/data combiner comprises an DC/DC power converter for converting said extracted low frequency power signal into one or more output voltages.

19.   A method for distributing electrical power over a data communication cabling infrastructure to one or more electrical power consuming network devices, said method comprising the steps of:

    generating a low frequency power signal from a source of electrical power;

5   injecting said low frequency power signal into a data communications signal being carried over said data communications cabling network so as to generate a combined power/data signal;

    transmitting said combined power/data signal onto said data communications cabling network;

10   receiving said combined power/data signal carried over said data communication cabling network; and

    splitting said combined power/data signal so as to yield said data communication signal separated from said low frequency power signal.

20.   The method according to claim 19, wherein said data communications network

15 comprises an Ethernet based Local Area Network (LAN).

21.   The method according to claim 19, wherein said source of electrical power comprises an AC mains power receptacle.

22.   The method according to claim 19, wherein said source of electrical power comprises an uninterruptable Power Supply (UPS).

20   23.   The method according to claim 19, further comprising the step of filtering high frequency noise and ripple from said low frequency power signal.

24.   The method according to claim 19, further comprising the step of sensing the current in said low frequency power signal.

25.   The method according to claim 19, further comprising the step of connecting and

25 disconnecting said low frequency power signal to and from said combined output power/data signal.

26.   The method according to claim 19, further comprising the step of detecting no-load and overload conditions on said combined output power/data signal.

27. The method according to claim 19, further comprising the step of converting said extracted low frequency power signal into one or more output voltages.

28. A system for distributing electrical power over a data communication cabling infrastructure to one or more electrical power consuming network devices, comprising:

a data communications cabling network;

a source of electrical power;

power supply means for generating a low frequency power signal from said source of electrical power;

combiner means coupled to said data communications cabling network, said combiner means for injecting said low frequency power signal onto a data communications signal being carried over said data communications cabling network so as to yield a combined power/data signal;

regulator means for regulating the injection of said low frequency power signal onto said data communications signal, said regulation including, but not limited to, ceasing the injection of said low frequency power signal and limiting its current;

extraction means for extracting said low frequency power signal from said combined power/data signal and for outputting said original data communication signal and said low frequency power signal.

29. The system according to claim 28, wherein said data communications network comprises an Ethernet based Local Area Network (LAN).

30. The system according to claim 28, wherein said power supply means is adapted to receive electrical from an AC mains power receptacle.

31. The system according to claim 28, wherein said power supply means is adapted to receive electrical from an uninterruptable Power Supply (UPS).

32. The system according to claim 28, wherein said combiner means comprises means for filtering high frequency noise and ripple.

33. The system according to claim 28, wherein said regulator means comprises means for sensing the current in said low frequency power signal.

34.   The system according to claim 28, wherein said regulator means comprises means for detecting no-load and overload conditions on said combined output power/data signal.

35.   The system according to claim 28, further comprising a management unit for monitoring and provisioning, via said data communications cabling network, the power/data combiners and power/data splitters located in said data communications cabling network.

36.   The system according to claim 28, wherein said extraction means comprises an AC/DC power converter for converting said extracted low frequency power signal into one or more output voltages.

37.   The system according to claim 28, wherein said extraction means comprises an DC/DC power converter for converting said extracted low frequency power signal into one or more output voltages.